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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Murali Basavaiah

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EXAMINER

UNELUS, ERNEST

ART UNIT

PAPER NUMBER

2181

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/726,269	<b>Applicant(s)</b> BASAVIAH ET AL.	
	<b>Examiner</b> ERNEST UNELUS	<b>Art Unit</b> 2181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10/27/08.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-20 and 24-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-20 and 24-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/27/08</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **RESPONSE TO AMENDMENT**

### **Claim rejections based on prior art**

Applicant's arguments filed 10/27/2008, with respect to the rejection(s) of claims 1-3, 5-20, and 24-31 under Mullendore et al. (US 2003/0185154) and Beukema et al. (US pat. 6,978,300) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Mullendore et al. (US 2003/0185154) and Kaul et al. (US 2005/0050211).

## **INFORMATION CONCERNING OATH/DECLARATION**

### **Oath/Declaration**

1. The applicant's oath/declaration has been reviewed by the examiner and is found to conform to the requirements prescribed in **37 C.F.R. 1.63**.

## **INFORMATION CONCERNING DRAWINGS**

### **Drawings**

2. The applicant's drawings submitted are acceptable for examination purposes.

## **REJECTIONS BASED ON PRIOR ART**

**Claim Rejections - 35 USC § 103**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-3, 5-20, and 24-31**, are rejected under 35 U.S.C. 103(a) as being unpatentable over Mullendore et al. (US 2003/0185154) in view of Kaul et al. (US 2005/0050211).

5. As per **claims 1 and 31**, Mullendore discloses an apparatus, comprising:

a port (**paragraph 0027 discloses “the switch device typically includes a processor, a buffer, a first port for coupling to a low speed or TCP/IP based network link”**) configured to receive a write command frame (**write 16MB**) with an OX\_ID or X ID (**see paragraph 0054, which discloses identifying a host**) and defining an initiating Host (**initiator 135**) and a target (**target 145**) (**see fig. 4 and paragraph 0054**);

a trapping mechanism (**paragraph 0046 discloses the buffer held the command within the switch**) configured to trap the write command frame; and

a processor (**the processor within the switch, as discloses in paragraph 0027**) configured to process the trapped write command (**see paragraphs 0029 and 0061, which discloses the processor within the switch is able partially transfer the write command**) to include a value (**see paragraph 0061, which discloses the command to include a value of 256 KB**); wherein the processor is further configured to initialize transfer ready command with the

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value (see paragraph 0061) and send the transfer ready command frame to the initiating Host before receiving a transfer ready command from the target (see fig. 5 and paragraph 0064, which discloses “When Fast Write is disabled, RTT messages are passed transparently from target to initiator”. Clearly, fig. 5, shows XFER\_RDY 128KB being sent from the switch 150 before it is received at the initiator (base on the arrow). As paragraph 0064 discloses, “RTT messages are passed transparently from target to initiator”. This XFER\_RDY 128KB is shown to be coming from the target).

but fails to disclose expressly a frame having a header with an OX\_ID or RX\_ID, modifying the OX\_ID of the write command header, and wherein the processor is further configured to initialize a receiver exchange identifier (RX ID) of a transfer ready command.

Paragraph 0018 of the applicant’s specification discloses “As previously noted, the OX\_ID field 32 and the RX\_ID field 34 are each 16 bits wide and are used for identifying the originating Host and target device”.

Similarly, Kaul discloses a data packet having routing header identifying a source and a destination target; in the same way that a RX\_ID is used to specifies a target. In other words, OX-ID and RX\_ID are being interpreted as addresses for a source and a destination.

With respect to “a frame having a header with an OX\_ID or RX\_ID, modifying the OX\_ID of the write command header, and wherein the processor is further configured to initialize a receiver exchange identifier (RX ID) of a transfer ready command” (see paragraphs 0023 and 0024 of Kaul).

Mullendore et al. (US 2003/0185154) and Kaul et al. (US 2005/0050211) are analogous art because they are from the same field of endeavor of packet switching in a wide area network (WAN) and/or local area network (LAN).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify a congestion management systems and methods are provided to overcome head-of-line blocking issues resulting from slower-speed network links, such as low speed WAN links or links using a TCP/IP based storage protocol as described by Mullendore and a method and apparatus to manage network addresses are described as taught by Kaul.

The motivation for doing so would have been because Kaul teaches, **“The remote user agent responds to the INVITE message using the local user agent's address information. This ensures that the proper signaling path is established between the user agents”** (see **paragraph 0031**).

Therefore, it would have been obvious to combine Kaul et al. (US 2005/0050211) with Mullendore et al. (US 2003/0185154) for the benefit of creating the apparatus to obtain the invention as specified in claims 1 and 31.

6. As per **claim 2**, the combination of Mullendore and Kaul discloses “the apparatus of claim 1” [See **rejection to claim 1 above**], Mullendore further discloses, “wherein the Switch **(150)** is an initiating Switch coupled to the Host **(135)** in a first SAN **(165)** (see **fig. 4**).

7. As per **claim 3**, the combination of Mullendore and Kaul discloses “the apparatus of claim 2” [See **rejection to claim 2 above**], “wherein the processor of the initiating Switch is further configured to modify the write command before forwarding the write command to the

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target (see paragraphs 0029 and 0061 of Mullendore which discloses the processor within the switch, and paragraph 0077 discloses the switch being a router. See also paragraphs 0023 and 0024 of Kaul).

8. As per **claim 5**, the combination of Mullendore and Kaul discloses “the apparatus of claim 4” [See rejection to claim 4 above], “wherein the initiating Switch uses the initialized RX\_ID value as a handle for accessing information pertaining to the write command session in a sessions ID table (See also paragraphs 0036 and 0044 of Kaul).

9. As per **claim 6**, the combination of Mullendore and Kaul discloses “the apparatus of claim 4” [See rejection to claim 4 above], Mullendore discloses “wherein the processor of the initiating Switch (135) is further configured to issue a Transfer Ready command (**XFER\_RDY 256KB**) to the Host (135) (see fig. 4).

10. As per **claim 7**, the combination of Mullendore and Kaul discloses “the apparatus of claim 5” [See rejection to claim 5 above], “wherein the initiating Switch (**150**) is further configured to initialize and use the initialized RX\_ID value for all communication related to the write frame (**16MB**) between the initiating Switch (**150**) and the Host (**135**) (see paragraph 0061 and fig. 4 of Mullendore and paragraphs 0023 and 0024 of Kaul).

11. As per **claim 8 and 15**, the combination of Mullendore and Kaul discloses “the apparatus of claim 3” [See rejection to claim 3 above], “wherein the initiating Switch (**150**) is further configured to modify the write command by modifying the OX\_ID value for the write command before forwarding the write command to the target (See paragraph 0023 and 0024 of Kaul).

12. As per **claim 9**, the combination of Mullendore and Kaul discloses “the apparatus of claim 2” [See rejection to claim 2 above], Mullendore discloses, “wherein the initiating Switch (150) is further configured to transfer additional data frames (256KB) (paragraph 0061 discloses that the switch separate the command into smaller portions and send those portions (256KB) separately to the target) to the target (145) when the initiating Switch (150) receives a Transfer Ready command (XFER\_RDY 256KB) associated with the write frame (write 16MB) from the target (see fig. 4).

13. As per **claim 10**, the combination of Mullendore and Kaul discloses “the apparatus of claim 1” [See rejection to claim 1 above], Mullendore discloses, “wherein the Switch (140) is a target Switch coupled to the target (145) (see fig. 4).

14. As per **claim 11**, the combination of Mullendore and Kaul discloses “the apparatus of claim 10” [See rejection to claim 10 above], Mullendore discloses, “wherein the target Switch (140) forwards the write command (16MB) to the target (145) (see fig. 4).

15. As per **claims 12 and 25**, the combination of Mullendore and Kaul discloses “the apparatus of claim 10” [See rejection to claim 10 above], Mullendore discloses, “wherein the target Switch (140) forwards data frames (128KB) associated with the write command (16MB) to the target (145) after receiving a Transfer Ready command (XFER\_RDY 128KB) from the target (145) (see fig. 4).



16. As per **claim 13**, the combination of Mullendore and Kaul discloses “the apparatus of claim 12” [See rejection to claim 12 above], Mullendore discloses, “wherein the target Switch (140) is further configured to buffer the data frames (128KB) prior to receipt of the Transfer Ready command (XFER\_RDY 128KB) see paragraph 0061 and fig. 4.

17. As per **claim 14**, the combination of Mullendore and Kaul discloses “the apparatus of claim 12” [See rejection to claim 12 above], “wherein target Switch (140) is further configured to maintain (the buffer inside the switch having a identified data) a sessions ID table and to use the OX\_ID of the write command as an index to the session corresponding to the write command (see paragraphs 0054 and 0061 of Mullendore and paragraphs 0023 and 0024 of Kaul).

18. As per **claim 16**, the combination of Mullendore and Kaul discloses “the apparatus of claim 5” [See rejection to claim 5 above], wherein the target Switch (140) is further configured to modify the OX\_ID value with communications between the target Switch (140) and the target (145) (see paragraphs 0029 and 0061 of Mullendore and paragraphs 0023 and 0024 of Kaul).

19. As per **claim 17**, the combination of Mullendore and Kaul discloses “the apparatus of claim 1” [See rejection to claim 1 above], wherein the Switch is further configured to use the RX\_ID value of trapped write commands to specify the amount of buffer space needed for the write command and use the write command frame to request the needed buffer space (paragraphs 0023 and 0024 of Kaul).

20. As per **claims 18 and 26**, the combination of Mullendore and Kaul discloses “the apparatus of claim 17” [See rejection to claim 17 above], wherein the Switch is further configured to use the RX\_ID value of trapped write commands to specify the amount of buffer space larger than needed for the write command and use the additional buffer space for subsequent write commands so that the Switch need not wait for a Transfer Ready command to transfer data related to the subsequent write command (see paragraph 0061 and col. 10, lines 58-65 and paragraphs 0023 and 0024 of Kaul).

21. As per **claims 19 and 28**, the combination of Mullendore and Kaul discloses “the apparatus of claim 1” [See rejection to claim 1 above], Mullendore discloses, “wherein the Switch (150) is further configured to, in the event the Switch does not have sufficient buffer space for the write command (write 16MB) (see paragraph 0064), to either: (i) generate a busy status signal to the initiating Host; (ii) placing the write command on a pending wait list (paragraph 0064 discloses, “then switch 150 holds the RTT message until buffer resources become sufficient to receive the entire write data specified by the RTT message ”) ; or (iii) forwarding the write command to the target (see paragraph 0070).

22. As per **claim 20**, the combination of Mullendore and Kaul discloses “the apparatus of claim 1” [See rejection to claim 1 above], Mullendore discloses, “wherein a first SAN (360) including the Switch (switch A or B); a second SAN (365) including a second Switch (switch C or D); and an inter-SAN network (310) connecting the first SAN and the second SAN (see fig. 13).

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23. As per **claims 24, 27, 29, and 30**, Mullendore discloses an apparatus, comprising:

receiving a write command (**write 16MB**) at a switch, the write command specifying a host (**initiator 135**) identifier corresponding to a host and a target (**target 145**) identifier corresponding to a target (**paragraph 0027 discloses “the switch device typically includes a processor, a buffer, a first port for coupling to a low speed or TCP/IP based network link”. see also fig. 4 and paragraph 0054**); the write command including an originator exchange identifier (OX\_ID) value and an uninitialized receiver exchange identifier (RX\_ID) value (**see paragraph 0054, which discloses identifying a host and a target**);

a trapping mechanism (**paragraph 0046 discloses the buffer held the command within the switch**) configured to trap the write command frame if the write command frame designates a predetermined Host\_ID (**the initiator, 135, ID**) and a predetermined target\_ID (**the target, 145, ID**) (**each command within a fibre channel protocol discloses the sender and the target identity, as discloses in paragraph 0054**); and

a processor (**the processor within the switch, as discloses in paragraph 0027**) configured to process the trapped write commands (**see paragraphs 0029 and 0061, which discloses the processor within the switch is able partially transfer the write command**) and send a transfer ready command frame to the initiating Host before receiving the transfer ready command from the target (**see fig. 5 and paragraph 0064, which discloses “When Fast Write is disabled, RTT messages are passed transparently from target to initiator”. Clearly, fig. 5, shows XFER\_RDY 128KB being sent from the switch 150 before it is received at the initiator (base on the arrow). As paragraph 0064 discloses, “RTT messages are passed transparently from target to initiator”. This XFER\_RDY 128KB is shown to be coming**

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**from the target**), wherein the transfer ready command received from the target is suppressed (see fig. 5 and paragraph 0072, which discloses putting the transfer ready command to an ‘end’. The word ‘suppressed’ is being interpreted as to put and end or to come to a stop).

but fails to disclose expressly a frame having a header with an OX\_ID and a RX\_ID value and initializing either the OX\_ID or RX\_ID of the write command header and ‘modifying’ the originator exchange identifier (OX ID) of the write command ‘to include’ the initialized RX ID value to generate a modified write command; and forwarding the modified write command to the target.

**Paragraph 0018 of the applicant’s specification discloses “As previously noted, the OX\_ID field 32 and the RX\_ID field 34 are each 16 bits wide and are used for identifying the originating Host and target device”.**

**Similarly, Kaul discloses a data packet having routing header identifying a source and a destination target; in the same way that a RX\_ID is used to specifies a target. In other words, OX-ID and RX\_ID are being interpreted as addresses for a source and a destination.**

With respect to “a frame having a header with an OX\_ID and a RX\_ID value and initializing either the OX\_ID or RX\_ID of the write command header and ‘modifying’ the originator exchange identifier (OX ID) of the write command ‘to include’ the initialized RX ID value to generate a modified write command; and forwarding the modified write command to the target” (see paragraphs 0023 and 0024 of Kaul).

Mullendore et al. (US 2003/0185154) and Kaul et al. (US 2005/0050211) are analogous art because they are from the same field of endeavor of packet switching in a wide area network (WAN) and/or local area network (LAN).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify a congestion management systems and methods are provided to overcome head-of-line blocking issues resulting from slower-speed network links, such as low speed WAN links or links using a TCP/IP based storage protocol as described by Mullendore and a method and apparatus to manage network addresses are described as taught by Kaul.

The motivation for doing so would have been because Kaul teaches, **“The remote user agent responds to the INVITE message using the local user agent's address information. This ensures that the proper signaling path is established between the user agents”** (see **paragraph 0031**).

Therefore, it would have been obvious to combine Kaul et al. (US 2005/0050211) with Mullendore et al. (US 2003/0185154) for the benefit of creating the apparatus to obtain the invention as specified in claims 24, 27, 29, and 30.

#### **RELEVANT ART CITED BY THE EXAMINER**

24. The following prior art made of record and not relied upon is cited to establish the level of skill in the applicant's art and those arts considered reasonably pertinent to applicant's disclosure. See **MPEP 707.05(c)**.

25. The following reference teaches a SAN using Fibre Channel header to modifying a Receiver Exchange Identifier (responder identifier):

**CLOSING COMMENTS**

**Conclusion**

**a. STATUS OF CLAIMS IN THE APPLICATION**

25. The following is a summary of the treatment and status of all claims in the application as recommended by **M.P.E.P. 707.07(i)**:

**a(1) CLAIMS REJECTED IN THE APPLICATION**

26. Per the instant office action, claims 1-3, 5-20, and 24-31 have received a first action on the merits and are subject of a first action non-final.

**DIRECTION OF FUTURE CORRESPONDENCES**

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ernest Unelus whose telephone number is (571) 272-8596. The examiner can normally be reached on Monday to Friday 9:00 AM to 5:00 PM.

**IMPORTANT NOTE**

28. If attempts to reach the above noted Examiner by telephone are unsuccessful, the Examiner's supervisor, Mr. Alford Kindred, can be reached at the following telephone number: Area Code (571) 272-4037.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be

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obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PMR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217- 91 97 (toll-free).

December 29, 2008

Ernest Unelus  
Patent Examiner  
Art Unit 2181

/E. U./  
Examiner, Art Unit 2181

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Supervisory Patent Examiner, Art Unit 2181